



SCORE  
IMPROVEMENT  
SYSTEM FOR THE  
**SAT\***

algebra

**PREPARE NOW!**

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SCORE  
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Math Module: Algebra Section  
User's Guide

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# INTRODUCTION

Welcome to the MATH MODULE of the HAYDEN SCORE IMPROVEMENT SYSTEM FOR THE SAT\*, one of three modules designed to help you raise your SAT scores. This Algebra Section is an effective tool to begin your preparation for the Mathematical section of the Scholastic Aptitude Tests. The system is easy to operate so that you can concentrate on its content. All of the information you need to complete examples or answer test questions appears on screen, as do instructions for moving from one part of the program to another. More detailed explanations follow in this manual. You can also read the instructions on screen by selecting the System User's Guide option after you load the program.

The ALGEBRA SECTION provides instruction and practice in solving the entire range of algebra problems of the types found on the SAT: linear and literal equations, systems of linear equations, quadratic and radical equations, and reducing algebraic fractions.

In addition, this manual contains an ANALYSIS OF THE SAT which gives you insight into the workings of the actual exam — its organization and scoring, plus test-taking strategies and tips for raising your scores.

The other areas in the Mathematical section of the SAT are Geometry and Quantitative Comparisons and Word Problems; separate sections in the Hayden System provide review material in these areas.

# 1. USING THE HAYDEN SYSTEM

## Menus

After you have loaded the Hayden Score Improvement System Program Disk into your computer's memory (see the loading instructions card) you will see the MAIN MENU with its two sections:

### MAIN MENU

- A. System User's Guide
- B. Algebra

The MAIN MENU lets you move easily from one section of the program to another. Simply press the key corresponding to the letter next to the section you wish to see.

When you select "B" from the Main Menu, a DETAIL MENU lists the options available:

### DETAIL MENU

- A. Definitions, Analysis and Strategies
- B. Examples With Tutormode
- C. Examples Without Tutormode

**Definitions, Analysis and Strategies** should be reviewed before beginning the examples. It provides useful strategies for tackling the kind of questions the subject covers. First, background information on each question type is presented, then methods for answering these questions, including valuable tricks and shortcuts, are demonstrated.

**Examples With Tutormode** is the core of the Hayden System. This option gives you a detailed, step-by-step explanation of how to arrive at the correct answer. By reviewing and practicing, you develop more efficient problem-solving techniques.

**Examples Without Tutormode** provides quick drill and practice in areas where you are already strong so that you can improve speed and accuracy. If you answer incorrectly, you are shown the correct answer, but no detailed explanation is provided. At the end of the section, the computer tallies the number of questions answered correctly and incorrectly, providing an indication of how well you have mastered the subject.

After you make a selection, the system will start displaying the review material.



## Function Keys

A function key is a key which has a specific effect on the program's operation each time it is pressed.

Whenever a menu is on your screen the following function keys are operational: M (Main Menu) and Q (Quit). Pressing "M" always brings you back to the Main Menu. Pressing "Q" causes the computer to ask if you really want to quit. Answering "Y" ends the program. If you answer "N", you may continue where you left off.

While text (either instructions or review material) is on the screen, pressing "R" restarts the section (erasing any previous answers you may have entered), pressing "M" takes you to the last menu displayed and pressing "Q" enables you to quit.

The left-arrow key lets you page backwards through the text one screen at a time until the first screen of the section is reached. When a question appears on the screen, your previous answer, if any, is shown. You can replace that answer by entering another one, or you can leave your answer undisturbed by pressing the left-arrow again.

Pressing the letter "O" leaves the current question temporarily unanswered and displays the next question. At the end of the section you have a chance to review all the unanswered questions.

## 2. ORGANIZATION OF THE HAYDEN SYSTEM

The Hayden Score Improvement System for the SAT is organized into three modules. It includes both simulated SAT exams and complete reviews of the areas covered by the Verbal and Mathematical sections of the SAT. In addition to this Math Module, the following modules are available:

**The Practice Tests Module** contains an on-screen version of the Analysis of the SAT found in this manual, plus a Pre-Test and two Practice Tests, as described below.

The Pre-test is a diagnostic-prescriptive tool for determining your strengths and weaknesses in the areas covered by the Mathematical and Verbal sections of the SAT. It is a two-hour test consisting of the same type of Math and Verbal questions found on an actual SAT. After you complete the test your computer will provide scores in each of sixteen subjects which contribute to your Math and Verbal scores. This profile of your performance indicates which additional modules in the Hayden System will be useful in your preparation.

The Practice Tests are two-hour simulated exams with complete Mathematical and Verbal sections timed and formatted to be representative of the latest SATs and scored on the SAT scale. After reviewing your weak areas, take these Practice Tests, and see how your performance would measure up on the actual exam.

**The Verbal Module** provides tutorials, drill and analysis for the verbal areas covered on recent SAT exams.

The Vocabulary Section provides a thorough review of antonyms, analogies and sentence completions, as well as an on-screen dictionary of 1000 words.

The Reading Comprehension Section offers strategies and practice in reading passages and responding to questions about the material just read. Working with passages drawn from the most up-to-date sources in a variety of fields will help you improve your ability to determine main ideas, to recognize logical implications and to extract factual information from what you read.

### 3. AN ANALYSIS OF THE SCHOLASTIC APTITUDE TEST

#### **Overview of the SAT**

The SAT is an exam which attempts to measure your potential to do college level work. Both Verbal and Mathematical skills are tested during a three-hour exam which is usually administered between 9:00 A.M. and 12:00 Noon on specified Saturdays.

The exam is normally divided into six sections at the end of which you will be told to stop work. You will not be permitted to return to an earlier section after the time limit has elapsed.

The Mathematical sections measure problem-solving abilities involving arithmetic, algebra and geometry. The Verbal sections measure understanding of word relationships as well as vocabulary and reading passages of varying difficulty. Both sections require an ability to reason logically, understand basic ideas and grasp essential details.

#### **SAT Format**

The usual three-hour test period is divided into six 30-minute sections: some Verbal, some Mathematical and the TSWE (Test of Standard Written English) section which is used by college placement officers. The TSWE is not computed in either the Verbal or Mathematical score. In the Hayden Score Improvement System you will not be concerned with the TSWE.

The six 30-minute sections normally included in the test book are as follows:

**1. Verbal Sections:**

two 30-minute sections with a total of 85 questions.

**2. Mathematical Sections:**

two 30-minute sections with a total of 60 questions.

**3. Test of Standard Written English:**

one 30-minute section with 50 questions.

**4. Experimental Section:**

one 30-minute section (Either Verbal or Mathematical or TSWE).

Only the Verbal and Mathematical sections count towards your SAT score, though you will not be told which section is experimental. The TSWE and Experimental sections are used for college placement and test control and are not included in your SAT score.

## Recording Answers

Each section of the SAT is preceded by a separate set of directions. Read the directions carefully to make sure you understand what you are being asked to do.

Here is an example a set of directions similar to those found in the actual exam.

**Directions:** Each question below consists of a related pair of words or phrases, followed by five lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

### Example:

Prong:Fork      (a) headlight:lamp  
                      (b) cylinder:motor  
                      (c) knife:edge  
                      (d) illustration:book  
                      (e) fence:house

(a) (b) (c) (d) (e)

(Darken the letter of your choice. In this example, (b) cylinder:motor is the correct choice.)

When recording your choices, avoid any stray marks on the answer grid. Such marks could invalidate an otherwise correct choice.

## SAT Scoring

Your answer sheet is evaluated by a scanning machine and the spaces blackened for each question are recorded on a computer tape.

The computer compares your answers with the correct responses to calculate your raw score. Each correct answer is worth one point. Questions omitted do not count toward your score. For incorrect answers, fractions of points are deducted: 1/4 point for questions with five choices and 1/3 point for questions with four choices. Therefore you should avoid random guessing. However, when you are able to reduce your choices to two, most educators advise you to guess.

The following conversion chart shows how raw scores are then converted into SAT scaled scores ranging from 200 to 800. The Hayden Score Improvement System utilizes this chart to calculate your SAT equivalent scores.

## Conversion Chart

### Raw Scores to College Board Scores

Raw Score	Verbal Section	Raw Score	Verbal Section
85	800	40	470
80	760	35	430
75	720	30	400
70	680	25	360
65	640	20	330
60	600	15	290
55	570	10	260
50	540	5	220
45	500	0	200

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Raw Score	Mathematical Section	Raw Score	Mathematical Section
60	800	25	480
55	750	20	440
50	700	15	390
45	650	10	350
40	620	5	300
35	570	0	250
30	520		

Your performance is compared with the performance of other students in the country. Approximately two-thirds of the students who take the SAT score between 400 and 600 on each of the tests.

The score required for admittance to a particular college or university is not fixed. No minimum score represents automatic admission.

### Best Preparation

If you practice the skills necessary to do well on the SAT, study the examination format, and learn to work within the prescribed time limit for the exam, you can achieve higher scores and greater confidence in test-taking.

The Hayden Score Improvement System is designed to help prepare you to take the SAT in an intelligent manner. It will train you to work within the time allotted for each section of the exam so that you can enter the exam room with a sense of ease, confidence and preparedness.

## **APPENDIX**

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